

EXHIBIT II

CONTRACT DATA REQUIREMENTS LIST

For

**MID-INFRARED INSTRUMENT (MIRI) DETECTOR
REQUIREMENTS**

FOR THE

JAMES WEBB SPACE TELESCOPE

Contract Plans and Documentation

The documentation deliverable under the referenced contract is summarized in the following Contract Data Requirements List (CDRL) which identifies the items to be delivered and when delivery is required, the quantity and type of each item, and frequency of issue. The Data Requirement Description (DRD) forms referenced in the CDRL describe the specific requirements for the item(s) to be delivered, reference documents, and other instructions as to content, format, and preparation.

Non-Design Documentation Identification

The contractor shall display on the cover of the title page of all deliverable non-design documentation (all documents except drawings and specifications)* the following minimum information:

- (1) Document Title
- (2) Contractor's Name
- (3) Contract Number
- (4) Document Number (JPL or Contractor assigned)
- (5) Contract Data , Requirements List (CDRL) item number
- (6) Subsystem or Support Equipment Name
- (7) Approval Signatures - Contractor For Final document, cite JPL approval letter
- (8) Project Identification, viz., "MIRI Si:As Detectors"
- (9) Date of Issue or Publication
- (10) Revision or Change Identification

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JPL will review documents submitted by the Contractor for JPL approval and approve or provide comments within twenty (20) working days of receipt at JPL, except as otherwise provided for in this Exhibit and the Statement of Work. In the event JPL does not make a formal disposition of a given document within the required twenty (20) days, the document is approved as submitted.

If the draft is approved by JPL, the Contract Negotiator will transmit a letter stating acceptance to the contractor. The contractor shall then prepare and deliver final copies as indicated in the CDRL.

If the original or draft submittal requires modification before JPL approval will be granted, the following steps will be taken:

1. The modifications required by JPL will be sent to the Contractor in writing by the JPL Contract Negotiator and discussed between the parties.
2. The Contractor shall submit an updated draft, containing the required modifications within twenty (20) working days (or as otherwise specified) after receiving written notice of the required modifications.
3. If the updated draft is approved by JPL, the Contract Negotiator will transmit a letter stating acceptance to the Contractor. The Contractor shall then prepare and deliver final copies as indicated in the CDRL.

Documents conditionally approved shall be resubmitted as final documents if all conditions of approval can be met exactly. If it is not possible to exactly meet the conditions of approval, the Contractor shall resubmit the document with all possible corrections completed and a letter explaining why the remaining corrections could not be made. Unless otherwise specified, re-submittal of data for approval shall be so identified and delivered ten (10) working days after receipt of JPL's comments.

Revisions or updates to any data requirements set forth herein shall be resubmitted to JPL. Unless otherwise specified in the CDRL or DRD, the requirements, approvals and number of required copies of the data items originally submitted shall also be applicable to the revision submittals.

Data Distribution

The number of copies to be delivered is provided in the CDRL. All data shall be delivered by a cover letter of transmittal to the JPL Contract Negotiator.

Date Due

Unless otherwise specified, all periods identified in the CDRL are in calendar days.

CDRL Definitions:

In the CDRL form a "yes" designate 'JPL Approval' and shall be interpreted as meaning that the approval of JPL is required before the indicated activity or task can proceed (see discussion above).

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A 'no' in the CDRL form indicates that JPL will review the document or item in parallel with the activity. The Contractor does not have to obtain JPL approval to proceed with the activity or task.

JPL intends that the Contractor submit material that is already in electronic form via magnetic media (e.g., word processing documents in Microsoft Word or WordPerfect).

Abbreviations (applies to all exhibits including S.O.W)

ADC	After Date of Contract
AGP	Additional General Provision
AIDS	Assembly, Inspection, and Data Sheet
ARJC	After Receipt of JPL Comments
CDR	Critical Design Review
CDRL	Contract Data Requirements List
C&DH	Command and Data Handling
CM	Configuration Management
D	JPL Document (D-xxxx)
DA	Direct Access
DATE	Direct Access Test Equipment
DRD	Data Requirement Description
DS	Design
EACS	Environmental Analysis Completion Statement
EC	Event Counter
ECI	Engineering Change Instruction
ECR	Engineering Change Request
EIDP	End Item Data Package
EM	Engineering Model
EI	Electromagnetic Interference
ENV	Environmental
EPS	Electrical Power System
E/RE	Environmental/Reliability Engineer
ESD	Electrostatic Discharge
ETSS	Environmental Test Specifications Summary
EQM	Engineering/Qualification Model
FA	Flight Acceptance
FED	Federal
FLT	Flight
FMEA	Failure Mode Effects Analysis
FRD	Functional Requirements Document
FS	Fabrication Specification
FSS	Flight Safety Survey
FTA	Fault Tree Analysis
G&A	General and Administrative
GEN	General
GFP	Government Furnished Property

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GSE	Government Supplied Equipment
IAW	In Accordance With
ICD	Interface Control Drawing, Interface Control Document,
LRE	Latest Revised Estimate
MA	Management
MICD	Mechanical Interface Control Drawing
MIL	Military
MIUL	Materials Identification and Usage List
MLI	Multi-Layer Insulation
MM	Magnetic Media
MMR	Monthly Management Review
MP	Materials and Processes
M&P	Materials and Processes
MRB	Materials Review Board
MTBF	Mean Time Between Failure
MUA	Materials Usage Agreement
NASA	National Aeronautics and Space Administration
NCR	Non-Conformance Report
NHB	NASA Handbook
NSPAR	Non-standard Part Approval Request
PA	Parts
P/FR	Problem/Failure Report
PD	Project Document
PDMS	Product Data Management System
PDR	Preliminary Design Review
PF	Protoflight
PM	Protoflight Model
PSR	Pre-Ship Review
QA	Quality Assurance
RA	Reliability Assurance
RE	Review
SA	Safety
SE	Support Equipment
SOW	Statement of work
SPF	Single Point Failure
SS	System Safety
STD	Standard
STE	Special Test Equipment
TD	Technical Document
TDM	Technical Direction Memorandum
WBS	Work Breakdown Structure
WCA	Worst Case Analysis

DRD	ITEM	Title	JPL Approval Code	Frequency of Issue	Due Date	Copies
CM DS MA	001	<u>Configuration Management</u>				
	1	Configuration Management Plan	Yes	Once	45 ADOC	1+ Electronic
	001	Interface Circuit Data and drawings				
	1	Final	Yes	Once	At CDR	
	001	Baseline Cost Estimate, Schedule and Workforce Reports				
	1	Negotiated Baseline Cost Estimate	No	Once	30 ADOC	1+ Electronic
	2	Revisions	Yes	As generated	5 days after request	1+ Electronic
	3	Form 533 M	No	Monthly	10 th day following reporting month	1+ Electronic
	4	Form 533 Q	No	Quarterly	10 th day following reporting quarter	1 + Electronic

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DRD	ITEM	Title	JPL Approval Code	Frequency of Issue	Due Date	Copies
MA	001					
	5	Rate changes shown on 533	No	As needed	As generated	1 + Electronic
	6	Labor workforce changes by month	No	As required	As generated	1 + Electronic
	7	All material changes	No	As required	As generated	1 + Electronic
	8	Work-around plans	Yes	As required	As generated	1 + Electronic
MA	002	Detailed and Summary Schedules				
		1 - Final	No	Once	30 days ADOC	1+ Electronic
		2 - Revisions	No	Monthly	10 th day following reporting month	1 + Electronic
MA	003	Quarterly Management Review (QMR) Minutes and Monthly Status Report	No	Once		
	1	QMR	No	Quarterly	10 th day following reporting quarter	1+ Electronic
	2	Monthly Status Report (MSR)	No	Monthly	10 th day following reporting month	1+Electronic

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DRD	ITEM	Title	JPL Approval Code	Frequency of Issue	Due Date	Copies
<u>MA</u>	004	<u>Management</u> Internal Audit Findings Reports	No	As generated		1 + Electronic
	005	Risk Management Plan and Reporting	No	Once with updates as needed		1 + Electronic
	006	Subcontracting Report	No	Once a year		1+ Electronic
PA	007	Corrective and Preventative Action Plan <u>Parts</u>	No	As generated		1 + Electronic
	001	Product Assurance Plan	Yes	Once	45 ADOC	1 + Electronic
QA	001	Quality Assurance Plan and Documentation				
		1 – Final Plan	Yes	Once	With PDR	1 + Electronic
		2 – Rework Procedures	No	As needed	Within 7 days of discrepancy	1+ Electronic
		3 – Discrepancy Reports	No	As needed	Within 7 days of discrepancy	1 + Electronic
QA	002	End-Item Data Package	Yes	With each part delivery		
RE	001	Preliminary Design Review (PDR) Package	No	Once	10 days before PDR	1 + Electronic
	002	Critical Design Review (CDR) Package	No	Once	10 days before CDR	1 + Electronic
TE	001	Test Plan	Yes	Once	At PDR	1 + Electronic
	002	Test Data and Reports	No	With each part	At part delivery	

<p>TITLE</p> <p>Configuration Management Plan</p>	<p>NUMBER</p> <p>CM 001</p> <p>Page 1 of 1</p>
<p>USE</p> <p>The plan describes the activities necessary to assure proper configuration control, identification, and accounting during detector, readout and hybrid design, fabrication, and assembly.</p>	<p>PROGRAM</p> <p>JWST - MIRI</p>
<p>INTERRELATIONSHIP</p> <p>DRD CM-002; DRD QA-001; DRD QA-002</p>	<p>REFERENCES</p> <p>D - 11096</p>
<p>PREPARATION INFORMATION</p> <ol style="list-style-type: none"> 1 The Contractor shall maximize use of the Contractor's existing configuration management system. 2 The plan shall specify which components, flight hybrids, and internal test equipment are configuration-controlled. 3 Drawings and specifications for the MIRI Detector, readout and hybrid shall be on Contractor format with Contractor numbers. 4 Selected engineering documentation will be reviewed and approved by JPL. 5 The Contractor shall maintain configuration control of all engineering documentation after release for a period of at least 5 years 6 Special tooling and test equipment documentation shall be under Contractor configuration control after release for a period of at least 5 years 	

<p>TITLE</p> <p>Interface Circuit Data and Drawings</p>	<p>NUMBER</p> <p>DS 001</p> <p>Page 1 of 1</p>
<p>USE</p> <p>To define and document the specific interface circuits to be utilized between the detector, readout, hybrid and motherboard and the external electronics and cold pedestal</p>	<p>PROGRAM</p> <p>JWST - MIRI</p>
<p>INTERRELATIONSHIP</p> <p>CM-001</p>	<p>REFERENCES</p>
<p>PREPARATION INFORMATION</p> <p>The Contractor shall prepare and deliver a detailed schematic of the detector, readout and hybrids. Sufficient detail shall be provided such that JPL can determine both the drive and readout electronics. The Interface Circuit Data shall include, but not necessarily be limited to, the following:</p> <p>1.- Schematics</p> <ul style="list-style-type: none"> a) The electronic schematic of the unit cells, multiplexers, outputs, references and test structures. And other circuits included in the readout b) Exact location and function of all the pads c) Expected value of the biases and value and shape of all the clocks needed to operate the arrays d) Expected shape and value of the output signals, including output impedances. e) Grounding pads. f) Any part identification number, including, but not limited to, lot, wafer, die, hybrid, motherboard, etc. <p>2. - The Contractor shall prepare a mechanical interface drawing that includes configuration and interface dimensional data applicable to the mounting of the hybrid and motherboard onto the cold pedestal and interconnection to the external electronics. The drawing shall include as a minimum, but is not limited to the following:</p> <ul style="list-style-type: none"> a) Maximum physical envelope and overall dimensions (length, width, height) of detector, readout and hybrid. b) Mechanical and electrical interfaces. c) Location of all external connections dimensionally referenced to a designated reference point agreed upon by JPL and the Contractor. d) Location of pin outs and their functions. e) Special physical handling, precautionary notes and warnings. f) Location of nameplate information for part and serial number, drawing number and revision letter. 	

DATA REQUIREMENT DESCRIPTION	
<p>TITLE</p> <p>Baseline Cost Estimate, Schedule and Workforce Reports</p>	<p>NUMBER</p> <p>MA001</p> <p>Page 1 of 1</p>
<p>USE</p> <p>To provide reports that shall be used for tracking cost, schedule and workforce variances for subcontracts that are under \$25 M and longer than one year.</p>	<p>PROJECT</p> <p>MIRI</p>
<p>INTERRELATIONSHIP</p>	<p>REFERENCES</p>
<p>PREPARATION INFORMATION</p> <p>The contractor shall submit the following management and financial reports.</p> <ol style="list-style-type: none"> Negotiated Baseline Cost Estimate for effort by month. Monthly 533M and Quarterly 533Q. Technical Progress Reports. Rate changes shown on 533. Labor workforce changes by month. All material changes. Work-around plans. Progress and cost & schedule variance report for all major subcontracts. 	

<p>TITLE</p> <p>Detailed and Summary Schedules</p>	<p>NUMBER</p> <p>MA 002</p> <p>Page 1 of 1</p>
<p>USE</p> <p>To provide current information for schedule planning.</p>	<p>PROGRAM</p> <p>JWST - MIRI</p>
<p>INTERRELATIONSHIP</p> <p>MA 001</p>	<p>REFERENCES</p>
<p>PREPARATION INFORMATION</p> <p>The Contractor shall prepare schedules that portray the plan for accomplishing all of the activities necessary to meet contractual requirements within the time constraints imposed by the performance and delivery schedule of the Contract. Interdependencies of the schedule tasks will be identified. A distinctive marking shall identify activities that fall on the “critical path”.</p> <p>The initial schedules shall show the planned start and completion dates. Monthly updates to the schedules shall, in addition to showing the planned dates, reflect any progress the Contractor has made toward accomplishing the schedule activities, and any projected changes to the planned start and completion dates.</p> <p>The schedule will be re-planned and re-based line with the consent of JPL if the initial schedule is no longer representative of the work to be done</p>	

TITLE Quarterly Management Review (QMR) minutes and Monthly Status Report	NUMBER MA 003 Page 1 of 1
USE To keep the JPL and Contractor management informed on a quarterly and monthly basis of current accomplishments and of major problems that require management assistance, resolution, or action to resolve or eliminate the identified problems	PROGRAM JWST - MIRI
INTERRELATIONSHIP MA-001, MA-002	REFERENCES
PREPARATION INFORMATION <p style="text-align: center;"><u>QMR</u></p> <p>The Contractor shall prepare and hold a Quarterly Management Review (QMR) with an agenda mutually agreed-upon in advance with the JPL CTM and Negotiator. In the oral presentations, the Contractor Project Manager shall address overall progress issues, with each lead engineer presenting the detailed technical work. QMR minutes shall be prepared and presented to JPL 10 days after the QMR. The minutes can be part of the presentation package and shall include, but not be limited to, the following information:</p> <ul style="list-style-type: none"> • Schedule, cost, and workforce status against plan • QA Status and issues • Action plan to address any problems • Contractual issues/ • Major accomplishments met and missed • Technical Progress • Major issues and concerns (risk item identification) • Status against technical requirements • Status of Procurements (Subcontracts and materials) • Waivers • Action item status • QMR minutes and Plans for next month <p><u>MONTHLY STATUS REPORT</u></p> <p>Each month, the Contractor shall prepare and submit via e-mail, to the CTM and Negotiator, a concise monthly status report with the following information:</p> <ul style="list-style-type: none"> • Accomplishments/schedule status. Identify progress versus planned accomplishments for the past month and any major (to JPL) status of activities and anticipated changes in schedule milestones, rationale for missed milestones, and specific actions to prevent impact to the critical path. • Problem status. State progress toward solving or averting problems previously identified. Discuss new major problems identified during the past month and any actions by or assistance from Contractor's management or JPL. Identify potential problem areas and recommend actions for JPL. • Completed forms 533 M & Q 	

DATA REQUIREMENT DESCRIPTION	
TITLE Internal Audit Findings Reports	NUMBER MA004 Page 1 of 1
USE To report corrective or preventive action taken to eliminate the causes of actual or potential non conformance to contract requirements.	PROJECT MIRI
INTERRELATIONSHIP	REFERENCES
<p>PREPARATION INFORMATION</p> <p>The contractor shall report any internal audit findings; risk items or deviations that have been determined to potentially affect mission success.</p> <p>This report shall include, but not be limited to, the following:</p> <ul style="list-style-type: none"> A. The effective disposition of concerns and reports of product non conformance. B. Investigation of cause of non conformance related to products and processes. C. Determination of corrective action needed to eliminate the cause of the non conformance. D. Application of controls to ensure that corrective action is taken and that it is effective. E. Appropriate close-out signatures, including the Cog Engineer and the Contractor's Project Manager. 	

DATA REQUIREMENT DESCRIPTION	
TITLE RISK MANAGEMENT PLAN AND REPORTING	NUMBER MA 005 Page 1 of 1
USE The Risk Management Plan establishes the framework within which the contractor will identify potential risks to schedule, cost or technical performance. Regular reporting of all identified risks to JPL is critical to allow JPL to balance overall project risks.	PROJECT MIRI
INTERRELATIONSHIP	REFERENCES Risk Management Handbook for JPL Projects, Rev. 0
<p>PREPARATION INFORMATION</p> <p>The Contractor shall prepare a Risk Management Plan establishing processes for regular input from “line” organizations regarding any aspect of the job, which poses a risk to completion on schedule, within budget or to technical performance requirements. As a minimum all high-risk disciplines should be listed in the plan with a process, that ensures weekly input. Additionally a process that facilitates input from anyone in the organization that perceives a risk item should be included in the plan.</p> <p>The plan should further provide for a method of categorizing risk items as to their severity and likelihood of occurrence; provide a method of tracking corrective or mitigating actions and final disposition.</p> <p>The risk items reported as a result of the Risk Management Plan shall be provided to the JPL Contract Technical Manager with a copy to the JPL Negotiator. The plan should be updated as required.</p>	

DATA REQUIREMENT DESCRIPTION	
<p>TITLE</p> <p>Subcontracting Report</p>	<p>NUMBER</p> <p>MA 006</p> <p>Page 1 of 1</p>
<p>USE</p> <p>Provides data on the implementation of the Contractor's Small Business/Small Disadvantaged Business Subcontracting Plan</p>	<p>PROJECT</p> <p>MIRI</p>
<p>INTERRELATIONSHIP</p> <p>PREPARATION INFORMATION</p> <p>Provide a Subcontracting Report for Individual Contract, Form SF 294 prepared in accordance with the instructions on the reverse side of the Form. (Note: Disregard instructions pertaining to semi-annual submittal).</p> <p>Prepare a Summary Subcontract Report, Standard Form 295, in accordance with the instructions on the reverse side of the form.</p>	<p>REFERENCES</p>

<p>TITLE</p> <p>Product Assurance Plan</p>	<p>NUMBER</p> <p>PA 001</p> <p>Page 1 of 1</p>
<p>USE</p> <p>To define the requirements of a Product Assurance Plan</p>	<p>PROGRAM</p> <p>JWST _ MIRI</p>
<p>INTERRELATIONSHIP</p> <p>OA-001</p>	<p>REFERENCES</p>
<p>PREPARATION INFORMATION</p> <p>The Contractor can meet its requirement by using one of the following options:</p> <ul style="list-style-type: none"> (1) The contractors adherence to the certified ISO 9000 (2) The Contractor's current standard practices and existing plans, as approved by JPL. (3) A Contractor prepared amendment to the Contractor's current standard practices and existing plans. (4) As a last option, a completely new Contractor prepared plan that meets the requirements of the referenced JPL Documents for the Contract in Exhibits I and III. <p>The document(s) submitted by the Contractor will be reviewed by JPL to verify that they meet the intent of the JPL requirements. The Contractor's documents, as approved by JPL, will become the applicable documents for the Contract.</p> <p>Any changes to these plans after initial JPL approval must be approved by JPL.</p> <p>The plan shall address the following topics:</p> <ul style="list-style-type: none"> (1) Reliability Assurance (2) Problem/Failure Tracking and Reporting (3) Material Review Board procedures (4) Waivers (5) Quality Assurance (6) Workmanship Standards/Handbook (7) Configuration Management <p>The contractor may generate either a single Product Assurance Plan that addresses all of the DRD requirements or individual plans that address the DRDs separately.</p>	

<p>TITLE</p> <p>Quality Assurance Plan and Documentation</p>	<p>NUMBER</p> <p>QA 001</p> <p>Page 1 of 1</p>
<p>USE</p> <p>To provide documents defining in detail the Contractors quality assurance activities conducted in support of the Statement of Work tasks for flight-type hardware.</p>	<p>PROGRAM</p> <p>JWST - MIRI</p>
<p>INTERRELATIONSHIP</p> <p>CM-001, PA-001, QA-002</p>	<p>REFERENCES</p> <p>D - 11141</p>
<p>PREPARATION INFORMATION</p> <ol style="list-style-type: none"> 1) The Project QA plans for the flight-type hardware shall be generated in accordance with and shall present all Quality Assurance activities in support of the tasks defined by the Statement of Work. 2) Quality Assurance documentation and data as required by the JPL approved Quality Assurance Plan. The documentation as a minimum shall contain the following items. <ol style="list-style-type: none"> a) Final QA plan should include: <ol style="list-style-type: none"> 1. Narrative explanations of the QA systems 2. Charts and narrative statements describing the functions, responsibilities, and relationships of each element in the Contractor's organization that implements the quality program, including procurement, engineering, fabrication, test, and quality control. 3. A description of QA requirements for and monitoring of subcontractors. 4. A description of the Contractors Material Review Board (MRB) process. 5. A description of the Problem Failure Reporting (P/FR) Processes. 6. ESD b) Documents Submitted for JPL Approval: <ol style="list-style-type: none"> 1. Product Inspection and Test Flow Charts 2. Waivers 3. Discrepancy reports c) Documents Submitted for Review <ol style="list-style-type: none"> 1.- MRB Reports 2.- Procedures Implementing the QA Plan 	

TITLE End-Item Data Package	NUMBER QA 002 Page 1 of 1
USE To document the design, fabrication, assembly, integration, and test history of the Hybrid Engineering and Flight deliveries	PROGRAM JWST - MIRI
INTERRELATIONSHIP QA-001, TE-001, TE-002	REFERENCES PD 686-014 D - 11141 D - 11096
PREPARATION INFORMATION <p>This CDRL applies only to the final hybrids mounted on motherboards and delivered to JPL as Engineering, Flight or Spare units. The Contractor determines the format of the data package. The contents of the package include, but are not limited to, the following information:</p> <ol style="list-style-type: none"> 1) As tested and delivered data for all engineering and flight hybrids mounted on motherboards. These include but are not limited to: <p>Hardware:</p> <ol style="list-style-type: none"> a) Part number and revision letter of each item. b) Part description (title) of each item.. c) Serial number of each item, or if no serial number, the screening lot number when required. d) Screening/demonstration/upgrade lot number, as applicable.. e) Applicable waiver numbers (with latest revision letter). f) Traceability number, as applicable (waiver and wafer lot number). 2) Documentation: <ol style="list-style-type: none"> a) A complete list of the tests and test results performed on the hybrid b) Test results summary on contractors' own format c) Summary of test result performed on sister parts to qualify the deliverable hybrids. d) A summary list, including open or closed status, of all MRB actions, ECR's and waivers generated against the deliverables. e) Evidence of acceptance by Contractor QA. f) Unique instructions for safety, handling, packaging, storage, or shipping (as applicable) 	

<p>TITLE</p> <p>Preliminary Design Review (PDR)</p>	<p>NUMBER</p> <p>RE 001</p> <p>Page 1 of 1</p>
<p>USE</p> <p>To review the detector, readout and hybrid designs and readiness of the Contractor, to proceed with detail design. To assess the Contractors progress, interpretation of the requirements, and to evaluate any risks to the final deliveries</p>	<p>PROGRAM</p> <p>JWST - MIRI</p>
<p>INTERRELATIONSHIP</p> <p>MA-001, MA-002, TE-001, TE-002</p>	<p>REFERENCES</p>

The Contractor shall conduct a PDR with the following objectives:

1. Review Project Planning and Status.
2. The preliminary designs and processes meet the requirements and are sufficiently defined, documented, and controlled to proceed with the detail design
3. Risk assessment.
4. The design analysis is sufficiently complete to proceed.

The PDR will require a formal presentation. Each review shall include, but not be limited to, the following:

1. Preliminary circuit designs.
2. Design prototype test results.
3. Requirements traceability and compliance matrix.
4. Block diagrams and flow diagrams.
5. Function and performance as compared to requirements.
6. Performance margins relative to required performance
7. Product quality assurance requirements.
8. Interface design.
9. Design trade-offs, alternatives, and selection basis.
10. Preliminary manufacturing process design.
11. Preliminary testing plans.

<p>TITLE</p> <p>Critical Design Review (CDR)</p>	<p>NUMBER</p> <p>RE 002</p> <p>Page 1 of 2</p>
<p>USE</p> <p>The critical design review evaluates the readiness of the project to proceed with fabrication, assembly and test. It assesses the compliance of design with applicable requirements.</p>	<p>PROGRAM</p> <p>JWST - MIRI</p>
<p>INTERRELATIONSHIP</p> <p>RE-001, MA-001, MA-002, TE-001, TE-002</p>	<p>REFERENCES</p>
<p>The Contractor shall conduct a CDR with the following objectives:</p> <p>a. General.</p> <ol style="list-style-type: none"> 1. Description of product or process. 2. Resolution of action items and issues from prior reviews, especially the PDR. 3. Risk assessment. 4. Open issues requiring resolution. <p>b. Product design.</p> <ol style="list-style-type: none"> 1. Requirements traceability and compliance matrix. 2. Configuration and design of all hardware, including block diagrams and flow diagrams. 3. Detailed design of all the components 4. Function and performance as compared to requirements. 5. Performance margins relative to required performance. 6. Test results for earlier models or prototypes. 7. Design trade-offs and alternatives considered, decisions made.. 8. Detailed interfaces and cable design. 9. Radiation susceptibility analysis and design. <p>c. Manufacturing readiness.</p> <ol style="list-style-type: none"> 1. Manufacturing plans and processes. 2. Long lead item status, if any 3. Documentation, plans, controls, and status. <p>d. Test Readiness.</p> <ol style="list-style-type: none"> 1. Approach to testing, including test environments. 2. Test instrumentation requirements. 3. Test flow Plan. 4. Test Procedure Plan. 	

<p>TITLE</p> <p>Test Plan</p>	<p>NUMBER</p> <p>TE 001</p> <p>Page 1 of 1</p>
<p>USE</p> <p>To provide a functional test plan for testing of detectors, readouts and hybrids and provide a basis for preparing testing procedures including, in-process, qualification, and calibration tests. Defines the measurement analyses to be completed for functional test.</p>	<p>PROGRAM</p> <p>JWST - MIRI</p>
<p>INTERRELATIONSHIP</p> <p>RE-001, RE-002, QA-002, TE-002</p>	<p>REFERENCES</p> <p>JPL D - 10958 (Pt 2&3)</p>
<p>PREPARATION INFORMATION</p> <p>The Test Plan shall identify all test steps and procedures and shall, in matrix form, list all components that will be tested These shall include:</p> <ol style="list-style-type: none"> 1. How many parts and type of parts will be tested (detector, readouts,, hybrids and hybrids on motherboards) 2. In process tests including calibrations 3. Type of tests that will be performed and under which conditions 4. Test equipment to be used for these tests 5. Time sequence and test flow . 6. Format which will be used for data reporting, including all the relevant operational conditions. 	

<p>TITLE</p> <p>Test Data and Reports</p>	<p>NUMBER</p> <p>TE 002</p> <p>Page 1 of 2</p>
<p>USE</p> <p>To provide functional and performance test data and reports to JPL. To provide the test documentation to ensure satisfaction of test specification requirements and traceability.</p>	<p>PROGRAM</p> <p>JWST _ MIRI</p>
<p>INTERRELATIONSHIP</p> <p>QA-002, TE-001</p>	<p>REFERENCES</p> <p>D - 10960 D - 10958</p>
<p>PREPARATION INFORMATION</p> <p><u>Test Data</u></p> <p>All test data shall be made available for inspection at the contractor within 5 days of JPL notification of intent to inspect the data.</p> <p><u>Test Reports</u></p> <p><u>Components (readouts, Detectors, die) Data</u></p> <p>For component parts the reports shall be informal and include all the data taken on the component, up to the delivery day, including data taken on sister parts to qualify the component using the contractor's own format. The data shall include all the operational conditions (biases, clocks, temperature, backgrounds, etc) so the test can be duplicated in other facilities.</p> <p><u>Hybrid Data</u></p> <p>JPL will accept the contractor formats as long as they include the data as described below. Each report from all the hybrids delivered in this program shall include as a minimum the following information:</p> <ol style="list-style-type: none"> 1 Identification of all the components (lot, wafer, die, etc.) 2 The operational conditions (Bias, clock values and shapes, temperature, background, etc of all different tests performed on the hybrids 3 Average values and histograms of all the key performance parameters such as QE, noise, dynamic range, uniformity, dark current, etc. as listed in the detector specifications. 4 Summary of the performance obtain in sister die relevant to the hybrid being delivered, such as spectral response, radiation tolerance, temperature cycling results, etc. 5 Copies of NCRs, MRB actions and waivers 	